WASHINGTON STATE UNIVERSITY
KING COUNTY EXTENSION

Biological Control of Noxious Weeds

Non-native noxious weeds are destroying biological diversity throughout Washington, decreasing forage and habitat for wildlife and livestock, increasing wind and water erosion, and decreasing land values. Many years of manual and chemical control are often required in order to have any impact on large infested areas, which can result in significant, and at times prohibitive, expenses for landowners and public agencies. For such situations, biological control offers an inexpensive, long-term weed suppression option, as site appropriate insects will self-perpetuate. The mobility of biocontrol agents also allows them to disperse to new and unknown weed infestations that may be difficult or impossible to reach with other control practices. Biological control is by no means a quick fix, agents may take several years to establish and perhaps longer to have significant impacts on weed infestations. Even so, some agents have proven to be extremely effective over time at bringing weed infestations down to a manageable size, and are in many cases the best management option. WSU Extension heads the *Washington State Invasive Weed Bioagent Enhancement Project* aimed at promoting the use of biological control agents for noxious weed management. In western Washington, King County Extension is taking the lead to assess and help meet the needs of this region.

Program Goals:

- Establish biological agents and manage them on a statewide scale to suppress noxious weeds in selected situations in a less expensive and more practical manner than other control methods.
- Increase public knowledge and awareness of the benefits and appropriate use of biological control as part of an integrated weed management strategy.
- Advocate for further research into biocontrol agents for weeds specific to this region.
- Foster and expand the westside component of the statewide project.

Program History:

In 1999, led by WSU Ferry County Extension, collaboration began between Ferry, Okanogan, Stevens and Pend Oreille county noxious weed control boards, Colville Confederated Tribes, and US Forest Service to expand the use of bioagents in northeast Washington to fight invasive weeds. USFS was a major contributor of funds to this effort, and the *Quad County and Colville Reservation Bioagent Project* was initiated.

Galerucella beetles on purple loosestrife in early spring; the damage they cause to leaves is already evident. *Photo T. Zimmerman*

Spotted knapweed at the time of release of *Larinus minutus* weevils. *Photo T. Zimmerman*

Though the Project works with many insects for several different weeds, suppression of diffuse knapweed (*Centaurea diffusa*), by the lesser knapweed flower weevil (*Larinus minutus*) has resulted in significant levels of weed suppression. So significant, in fact, that financial support of the project has increased to allow for an increase in public outreach efforts and, in 2002, expansion westward as the *Washington State Invasive Weed Bioagent Enhancement Project*. The statewide project is funded in part by the US Forest Service in cooperation with USFS district offices, county extension and weed board offices, Colville and Yakima Nation Reservations, Washington State Department of Fish and Wildlife, Washington Department of Natural Resources, and other collaborators.

June 2004

Enhancing the use of biological control agents for noxious weed management

Regional Effort:

In western Washington the target species and the need for biocontrol differ from eastern and central Washington, but the larger project goals remain the same. Biocontrol has been utilized in western Washington by county noxious weed control programs for some time, but these efforts have varied greatly from county to county and have been limited by a lack of landscape-wide activity. This regional coordination is a large part of the role of the westside biocontrol coordinator who was hired in spring 2003. Since that time, in addition to the funding support the larger project has received, both the King and Pierce County Noxious Weed Control Boards have supported the western WA focus area.

A Canada thistle infestation in Pierce County receives some insects. *Photo P. VanDenBroek*

The Project gets some help releasing insects on purple loosestrife from Leevon Carlson, a great helper in Mason County. *Photo T. Zimmerman*

Spring 2004:

Education and Public Outreach

- Presentations as part of pesticide re-licensing programs for 75 pesticide applicators in King, Lewis, Grays Harbor, and Thurston Counties.
- Lesson and activity for 20 middle school students on Integrated Pest Management in King County.
- Display at WSU King County Extension Small Farm Expo in King County.
- Presence at Northwest Flower and Garden Show with the Washington State Noxious Weed Control Board.

Insect Collections and Redistributions

- 2400 *Galerucella sp.* for control of purple loosestrife
- 1300 *Larinus planus* for control of Canada thistle
- 85 *Cassida rubiginosa* for control of Canada thistle
- Helped facilitate collection and redistribution of 1000 *Larinus sp.* for control of meadow knapweed

Future Plans:

The *Washington State Invasive Weed Bioagent Enhancement Project* continues to grow and evolve in western Washington with the needs of the region. Upcoming additions include:

- utilizing King County Extension volunteer stewards for public outreach around noxious weeds,
- expanding the long-term goals of the program to include agricultural biocontrol of pests, and
- developing a vision for a "Biocontrol Center"; an education center and information clearinghouse designed for land managers, farmers, and the general public.

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